

# Use Cases and Requirements for MPLS-TP multi-failure protection

draft-cui-mpls-tp-mfp-use-case-and-  
requirements-00.txt

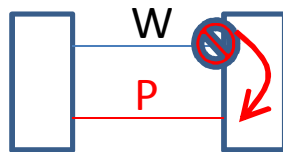
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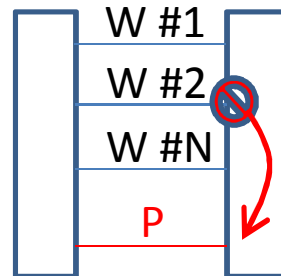
Rolf Winter <Rolf.Winter@neclab.eu>

# Problem statements

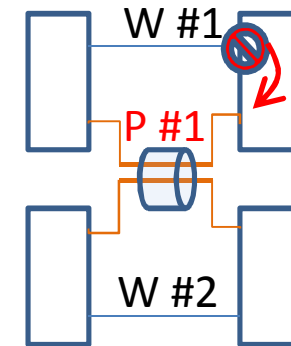
- Common protection schemes can restore user traffic after a single-failure condition, but not able to care the multi-failure condition\*.



1+1/1:1 protection



1:N protection

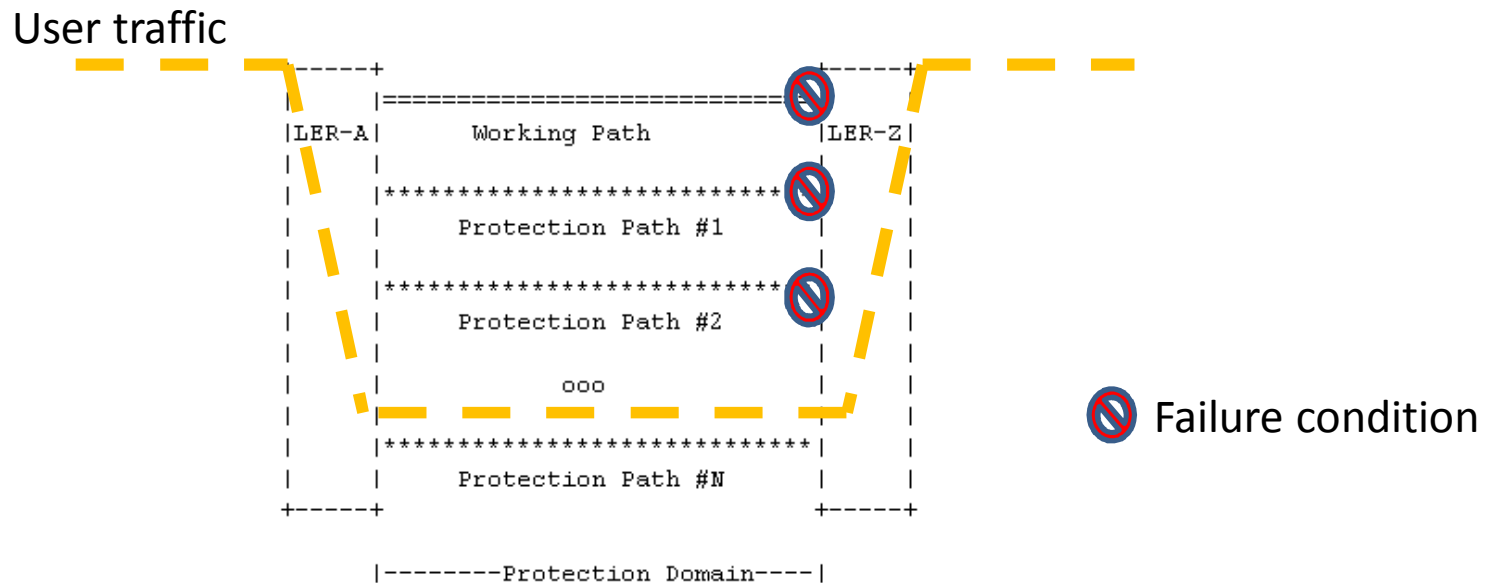


Shared protection with  
1+1/1:1 protection

\* The failure occurred in both working and protection path

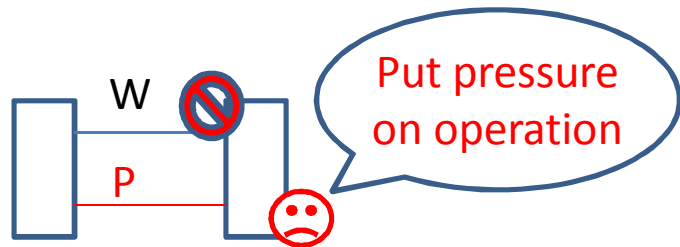
# What is multi-failure protection?

- A multi-failure protection domain is composed of a working path and N protection paths.
  - It can continue service even if multi-failure condition occurs in both working and protection paths.

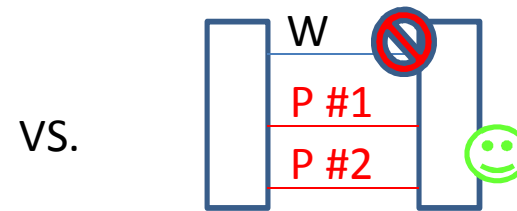


A basic sample of multi-failure protection

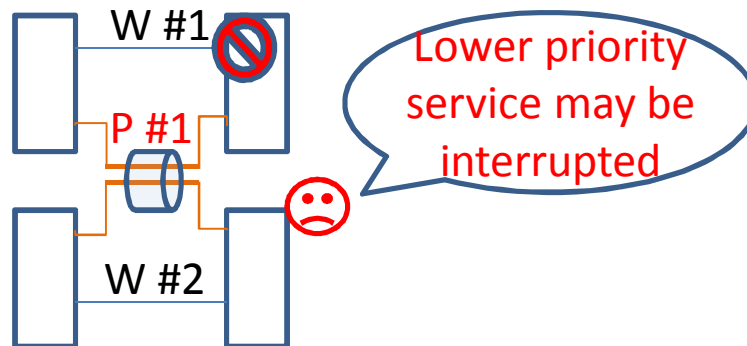
# Why do we need to care for the multi-failure condition?



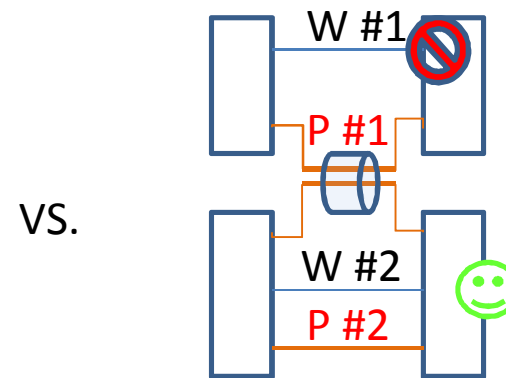
1+1/1:1 protection  
on signal failure condition



multi-failure protection  
on signal failure condition



1:1 Shared protection  
on pre-emption condition



Shared multi-failure protection  
on pre-emption condition

# requirements

- Configuration
  - One or more protection paths are instantiated between the same end nodes as working path.
- Resource reservation
  - Should support the shared mesh protection.
- Protection switching time
  - Must support switching time within 50ms.

# Summary

- Multi-failure protection should be considered in TP-enabled transport network.
- Solicit more comments from WG.